coster group

PERSONAL AUTOMATION

WebGarage

YLC Setpoint Management

FW 732 or higher

Rev. 1.0

1 Introduction

This document will explain in detail how the time scheduling from WebGarage on YLC controllers works with FW 732 or higher.
For YLC controllers with lower FW versions, refer to the document *"WEBGarage - YLC Setpoint Management FW 731 or lower*" (request it to assistenza@costergroup.eu)

The concept of the new approach consists in the definition of four operating modes for each flow/user circuit that is programmed in CosterCAD and imported into WebGarage. These operating modes are equivalent to: OFF, Economy, Precomfort and Comfort. It will be possible to select these modes through a special software selector present as a point on WebGarage.

The advantage of this approach (shown in any case below in this document) will be that of giving the user the possibility of having a single Scheduler that will be able to manage several flows/users that can follow different Setpoints according to the settings chosen.

2 Screen Parameters

Once you have imported the screen through the **IMPORT WIZARD** application and opened the respective **YLC CONFIG** Web page, for each flow, you will find "Flow Parameters".

The screen that will be displayed in the "On/Off Mode" submenu shows the parameters of interest for the purpose of this document.

1. **Operating mode** is an enumerative parameter that has four values:
    - **OFF:** the circuit is forced off with no setpoint and request from the circuit to the generators. All actuation and control devices related to the circuit in question are therefore deactivated;
    - **ON:** The circuit is forced on. Until the selection is "ON" the setpoint taken into consideration by the controller for the circuit in question is the one set in "Desired temperature";
    - **YLC Time Schedule:** the switching off/on (on different time bands and on all days of the week) of a certain setpoint is set through the Time Schedule option on the screen. Through this selection it is possible to configure the on and off time bands by writing directly into the memory of the control unit installed in the plant;
    - **Managed by WebGarage:** this parameter is only available for YLC controller versions 732.00.04 or higher. Choosing this option, the circuit Setpoint is

changed through the three preset setpoints (Eco, Pre-Confort and Comfort) that can be set, selected and scheduled from WebGarage.

2. Desired temperature is the setpoint you want to set for the corresponding circuit/user if the previous option (Operating mode) is set to ON.

3. WebGarage Eco Setpoint is the Eco preset value of the flow/user circuit which can be changed from the screen or through a point in WebGarage.

4. WebGarage Pre-Comfort Setpoint is the Pre-Comfort preset value of the flow/user circuit that can be changed from the screen or through a point in WebGarage.

5. WebGarage Comfort Setpoint is the value of the Comfort preset of the flow/user circuit which can be changed from the screen or through a point in WebGarage.

The three Economy, Pre-Comfort and Comfort setpoints are active and can be selected only if the "Managed by WebGarage" option is chosen in the "Operating mode" parameters. The change from one setpoint to another is made (e.g. from Economy to Comfort) through a point automatically imported through the Y controllers import wizard.

3 WebGarage Time Schedule - in detail

By choosing the "**WebGarage Management**" option, the YLC controller changes the operating mode between the various set points (Eco, Pre-Comfort and Comfort) based on a point automatically imported through the **IMPORT WIZARD** application. As is occurs for all points of Y-Series controller, this point can be viewed using the DB BUILDER application. The name of the point will depend on the name given to the flow circuit in CosterCAD[1].

Regarding this point there are three important concepts to remember:

1) The circuit point is writable by WebGarage which can freely change the flow/user circuit mode and it is in operation only when the WebGarage is connected to the YLC controller.

2) If there is a disconnection between BMS and YLC controller, the WebGarage would no longer be able to send updates on the change of this point. To avoid this possible situation, a function has been implemented from the FW 731 version and subsequent versions, that allows the YLC controller to understand whether or not the connection with the Webgarage is present and if this connection is absent for

[1] It is recommended not to use too long names for the flow circuits within CosterCAD in order to have a better displaying in WebGarage

more than one hour (1h), the controller independently switches to the time schedule inside the controller for the corresponding circuit set.

3) In addition to changing to the three modes (Economy, Precomfort and Comfort) the WebGarage can force the circuit to OFF.

4) Such point is of Enumerative type (integer/multi-state number) that means that it can take only four values:
   - OFF
   - ECONOMY
   - PRE-COMFORT
   - COMFORT

4 WebGarage Time Schedule - additional points that can be used

In addition to the point automatically imported through the standard integration procedure for Y Series controllers, it is possible to integrate for each flow/user circuit a series of points (Modbus registers) that allow to manage this new functionality in the best possible way.

First of all, each Setpoint value for the three modes can be managed individually and from WebGarage. This means that the Setpoint value for Economy, Precomfort and Comfort can be changed.

In addition there will be three more points available:

- **Operation mode Effective:** returns the feedback of which mode is active inside the Y Series regulator; in particular, it shows whether the supply/output circuit is in OFF or ON (and whether this mode has been set via SW or via HW), whether it is following the internal time program (and whether this program is operational due to the loss of communication with the supervisor) or whether WebGarage Management is active.
- **Actual Setpoint:** returns the Setpoint in use for that flow/user circuit (indistinctly if it is from internal scheduler, from WebGarage or other);
- **WebGarage timeout expired**: this is a binary value that warns when the controller - although set to receive the Setpoint change from WebGarage - is proceeding with its internal programming (in this case it therefore warns that the register has not been written for more than an hour due to connection problems or failure to configure the Tuning Policy).

5 Scheduler setup and creation

1. After selecting the "Managed by WebGarage" from the screen, it is necessary to open the Scheduler application in WebGarage.

2. Once the application is open, click on the gear icon in the sidebar (point 1) and then create a new scheduler (point 2).

When creating the new Scheduler, WebGarage, through a pop-up window, asks you to enter:

- The Scheduler name, which is also the identifier of the scheduler being created;
- The type of data to modify through the Scheduler type:
  - Boolean (if the data is binary. Example: "False/True" or "OFF/ON" value);
  - Enum (if the data to be modified is an integer number or multi-state value. Example: Economy(0) , PreComfort(1), Comfort(2));
  - Number (if the data is a number with decimal point. Example: Temperature setpoint, humidity, etc.);
  - String (if a string has to be modified).

- Default value, which is the value that the WebGarage sends to the point to which it is connected if no event is active within the scheduler being created. If this option is selected in the next step of the pop-up window, WebGarage allows you to enter the default value.

3. The following step allows to connect the Scheduler to the point on the YLC controller that you want to change.

4. In the last step, opening the Scheduler just created, it is possible to enter the times within the week (point 1, 2 and 3 in the image below) with the relative setpoint value (point 4). Obviously if you have chosen more than one setpoint on controller Y in the previous step, the Scheduler will be active on all selected points.

6 Tuning policy settings

The Tuning Policies are the settings according to which the WebGarage writes, reads or historicizes a certain subset of points. When importing points through the IMPORT WIZARD application there are already predefined Tuning Policies. In order to make the recovery disaster algorithm work correctly (return to the time schedule existing in the controller if the communication with the WebGarage fails) it is necessary to create a new tuning policy and connect it to the Setpoint concerned (operating mode in this case).

To create it, select the DB Builder application and then in the options tree on the left of the screen select the "Tuning Policy" section (point 1).
Inside the pop-up window that will display (point 2), you will have to set the name of the Tuning Policy and enable all the options, in particular:

- Enable Min Write Time: minimum time between two write commands (it is recommended to disable this option);
- Enable Max Write Time: maximum writing time must be less than 60 minutes (15 or 30 minutes recommended);
- Schedule Write: used for synchronization between schedules of different platforms (it is recommended to disable this option);
- Enable Poll Time: polling time (recommended maximum 15 minutes).

Once the parameterization has been completed, confirm the choices made and drag the new Tuning Policy on the setpoint inside the Equip that you want to manage through the Scheduler application in WebGarage.

7 Notes

7.1 Scheduler with Optimizer

It is necessary to be careful when using the Scheduler from WebGarage (therefore not using the internal time schedule of the YLC controller) the plant optimization algorithm is automatically bypassed and will not work.

7.2 Hot/Cold Circuit Scheduler

The Scheduler for two tube hot/cold circuits has only one setpoint as described in the previous paragraphs. This setpoint is applied to the circuit for both changeover values (both summer and winter).